

Newsletter

Volume 17, Number 6
November - December 2000

Director's Note

November 3 was a very special day for me and for IES. On that Friday, we dedicated the Institute's new laboratory building. You will read more about the day's events in this newsletter, so, importantly, what I want to write in this space is a thank-you note.

Thank you, to the IES Board of Trustees, who placed my name on the new building. The fact that the plaque is made of granite has special meaning for me, because it was the impervious granite bedrock at the Hubbard Brook Experimental Forest in the White Mountains of New Hampshire that prompted my colleagues and me, nearly 40 years ago, to start whole watershed experiments. I have been doing research at that site since that time. Thank you to my family, for always supporting my efforts. Thank you to Centerbrook Architects and Storm King Contracting, for helping us to design and build this wonderful new laboratory. Thank you to the enormously talented staff who make IES the outstanding institution that it is.

And, finally, thank you to those who gave so generously during the capital campaign, which made this building possible.

The *IES Newsletter* is published by the Institute of Ecosystem Studies, located at the Mary Flagler Cary Arboretum in Millbrook, New York.

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The Gene E. Likens Laboratory Opens Its Doors

Well over 200 supporters and staff gathered at the Institute of Ecosystem Studies on Friday afternoon, November 3, to celebrate the opening of the Institute's new laboratory facility. The Gene E. Likens Laboratory, named for the Institute's founding director, will provide the additional space needed for IES ecologists to continue to do the first-rate science for which they have become internationally known.

At the November 1999 meeting of the IES Board of Trustees, members voted to name the new laboratory for Dr. Likens. Director of the Institute since the facility opened in 1983, Likens has spent the last four decades doing research on the ecological relationships that help to determine the quality of our environment. Discoveries made in the course of this research have earned him ecology's top honors, a number of which have been reported in previous issues of the newsletter. Dr. Likens continues to do his research, both at IES and in the White Mountains of New Hampshire, site of the Hubbard Brook Ecosystem Study of which he was a co-founder in 1963.



The Institute's Gene E. Likens Laboratory is a fitting backdrop for incoming Chairman of the Board Dr. Paul Risser, IES Director Likens, and outgoing Chairman Ms. Gretchen Long Glickman.

Paul Risser Is New Board Chairman

After seven years of service, Ms. Gretchen Long Glickman has chosen to step down as Chairman of the Institute's Board of Trustees. The Board has named Dr. Paul Risser the new Chairman.

Dr. Risser is an internationally known biologist whose research interests include the structure and function of grassland and forest ecosystems, environmental planning and management, landscape ecology, and global change. When he joined the IES Board at the time of its formation, in 1993, he was

The Likens Laboratory, which is adjacent to the Institute's Plant Science Building, was designed by Centerbrook Architects and Planners, Centerbrook, Connecticut, with the Institute's needs in mind. In addition to housing laboratories for nine ecologists and 14 research assistants, there are state-of-the-art analytical and technical laboratories, and a large central workspace for shared facilities and equipment. Storm King Contracting, Inc., in Montgomery, New York, was the general contractor. People driving by the Institute over the last year have been especially curious about the cylindrical structure at one end of the new structure. IES Manager of Operations Chuck Kimberling explains that this silo houses the complex mechanical systems essential to the functions of the modern laboratory.

The laboratory facility and the Institute's first endowed chair were the two goals of the "Campaign for the Institute of Ecosystem Studies", a three-year, \$6M campaign that was completed in December 1999.

president of Miami University in Oxford, Ohio, as well as a professor of botany there. In 1996 he assumed the presidency of Oregon State University, in Corvallis, where he is today.

Dr. Risser is an associate member of the Paris-based Scientific Committee on Problems of the Environment (SCOPE), where he served as Secretary General from 1995-1998. He has served as president of the Ecological Society of America and of the

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Excellence in Ecology: An IES Celebration

What are the environmental issues that we as a global population face over the coming decades? What can scientists do to help influence and guide decision makers to make sound and sustainable policy? The celebration of the opening of the Gene E. Likens Laboratory was an opportune time to invite a distinguished body of speakers and panelists to lend their thoughts to these questions.

Early afternoon on the third of November found friends, supporters and staff filling every seat in the IES Auditorium for "Sustaining Earth: Environment and Development in the 21st Century". The stage was set by Ms. Gretchen Long Glickman who welcomed those in attendance and outlined the symposium's objective: to discuss global trends that are challenging our environment and to highlight the importance of ecosystem science in addressing these complex environmental problems.

Dr. Likens was next at the podium, and elaborated on the theme of excellence. "Excellence at IES is a real goal," he said, and presented its components: 1) the promotion and nourishment of creative thoughts and ideas; 2) innovative interaction among bright people; 3) academic freedom to express and debate ideas; 4) cooperative pursuit of new ideas, based on his experience that several bright and inquisitive minds often achieve major insights beyond the reach of a single individual; and 5) the time and support to pursue important ecological problems in depth. "Ecological understanding and education offer tangible hope for addressing extremely complex and potentially devastating environmental problems," he concluded. "Unraveling ecological complexity and communicating the results to decision makers in a useful way are monumental tasks, yet these are the challenges we [at IES] have accepted."

In his keynote address, "Running Out of Time: The Cascading of Environmental Consequences", Dean Speth gave a perspective of environmental issues and action in the 30 years since the first Earth Day. During President Carter's administration, he said, he and Dr. Lee Talbot — an IES trustee since 1993 — requested that the president do a report on what the environment in the year 2000 should look like. "Despite having 20 years to do something about [the environment]," Speth said, "we've done very little — *very little* — to reverse the basic trends that we reported on in the Global 2000 Report." He added that while we understand the issues better now, and a tremendous amount of outstanding research has been done, "Have we modified the trends? Have we acted?" Answering his own question: "In general, no."

Sustaining Earth: Environment and Development in the 21st Century Symposium Participants

Gretchen Long Glickman, outgoing Chairman, Institute of Ecosystem Studies

Gene E. Likens, Director, Institute of Ecosystem Studies

James Gustave (Gus) Speth, Dean and Professor in the Practice of Environmental Policy and Sustainable Development, Yale School of Forestry and Environmental Studies

Pamela A. Matson, Goldman Professor of Environmental Studies and Director, Earth Systems Program, Stanford University, and Trustee, Institute of Ecosystem Studies

Paul G. Risser, President, Oregon State University, and incoming Chairman, Institute of Ecosystem Studies

Panelists (*in photograph below, left to right*):

Richard S. Ostfeld, Animal Ecologist, Institute of Ecosystem Studies

Thomas E. Lovejoy, Senior Scientist, Smithsonian Institution, and Chief Biodiversity Advisor to the President, World Bank, and Trustee, Institute of Ecosystem Studies

Anne M. Tatlock, Chairman and CEO, Fiduciary Trust Company International

Andrew C. Revkin, Environmental Reporter for the Science Section, *The New York Times*

Peter M. Groffman, Microbial Ecologist, Institute of Ecosystem Studies

Steward T.A. Pickett, Plant Ecologist, Institute of Ecosystem Studies.



SYMPOSIUM PHOTOS BY LONNA KELLY

Speth drew three overall conclusions. First, he said, we are now running unprecedented environmental risks and the next two to three decades could see unprecedented environmental decline. Second, we have had a "generation of failure" — his generation, he admitted, was on notice and didn't act. And, finally, "The current generation, the next 30 years or so, is the last chance to get it right. We are running out of time and the most discouraging thing is there doesn't seem to be a sense of urgency."

Dr. Matson looked to the future in her talk, "Addressing Global Environmental Challenges in the Next Decades". The most critical of these challenges, she began, are those relating to the needs of the human population: feeding, housing, educating, employing, sheltering. "Meeting these needs is an enormous challenge. If we do it wrong, there will be tremendous negative consequences for natural and living resources, for our global life support system — water and atmosphere — and for the environment in general." If that happens, she continued,

we'll have little chance of meeting the needs of a growing population.

Matson illustrated how in the next decades we'll see research and problem solving shift from the single-issue focus to a focus on multiple and interacting changes. Ecosystems and communities, she said, are linked via atmospheric and water transfers, species transfers and multiple human mechanisms. Therefore, scientists must join together not only with scientists from many different disciplines but also with corporate and industrial leaders and with landowners, and use that collaboration to begin to develop solutions to the very complex problems that have a direct connection to the well-being of people. She views IES as an example of an institute that facilitates this kind of collaboration. "Many of the projects going on here, like the Baltimore Ecosystem Study, or the Hudson Estuary Management Program that some of the scientists here participate in, are examples of how scientists can work together

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Dr. Matson

with people from many different disciplines — with a lot of you — to develop sustainable approaches to manage our resources and our development."

Following a short break, a six-person panel reflected and expanded upon the remarks by Dean Speth and Dr. Matson as Dr. Likens read questions submitted by the audience. It was then up to Dr. Risser to provide synthesis of the facts, figures, historical perspective, current events and future challenges that had been laid out in the course of the afternoon.

Risser reviewed the main points that arose from the presentations and the panel's interactions with the audience, arranging them in four categories.

First, population was part of every conversation: numbers, consumption and impacts, demography, age classes and spatial distributions. Second, the practice of science has

changed. Public involvement is far greater than it used to be, and since this influences how science is done, and how it is interpreted, listening to the public becomes even more important to scientists. Third, there is a conflict in how science is used. The tendency can be to disregard science because it is overly simplified or overly complicated, so the doers of science need to pay attention to make sure it is neither. And, finally, science in the future will be more integrative. Research in ecology must involve all the users of science as well as those who raise the scientific questions.

"When you think about the topics in ecology today, and our conversations today, they've ranged all the way from genetically modified organisms to global change and global processes," Risser said. Noting that Institute of Ecosystem Studies research interfaces with smaller organisms and also with the larger spatial scales, he concluded: "If you think about what I've said here in terms of the



Dean Speth

Risser, from page 1

American Institute of Biological Sciences. Currently, among other positions, he is chairman of the Ecosystems Panel of the National Academy of Sciences and a member of the board of the Smithsonian Institution National Museum of Natural History. He is also on the Steering Committee of the Aldo Leopold Leadership Program, for environmental scientists who want to be more effective communicators of scientific information.

Ms. Glickman, Dr. Risser's predecessor, was the first Chairman of the IES Board. She helped to bring a newly independent institution to maturity, and her guidance and hard work throughout the capital campaign was critical in ensuring its success. The Trustees have named her Honorary Trustee; she is the first to hold this rank.

future of science as well as the challenging issues that we talked about, you'll see that IES is right square in the middle of those scientific issues that need to be addressed. The research and education programs done here are crucial to our success, and I think we should conclude by saying thanks to IES."

Following the symposium and the dedication of the Gene E. Likens Laboratory, campaign donors, special guests and staff enjoyed an evening celebration at the IES Greenhouse.

Hudson River Research Receives New Support

Instead of getting "normal" weather, it seems that the Hudson Valley is subjected to a series of variable and unpredictable events. This year was no exception, with a cool wet summer and several violent storms leaving their marks on our landscape. The same variability in weather and other natural conditions that affects our lives also has profound effects on natural ecosystems. Thus, short-term studies can give incomplete or even incorrect answers about how ecosystems work. To encourage a fuller, long-term perspective on how ecosystems work, the National Science Foundation offers grants in Long-Term Research in Environmental Biology (LTREB) to investigators involved in decades-long studies of ecosystems.

A team of IES scientists — Drs. Nina Caraco, Jonathan Cole, Stuart Findlay, Michael Pace and David Strayer — recently received an LTREB grant to continue their study of the effects of zebra mussels on the Hudson River ecosystem. Zebra mussels, which first appeared in the Hudson River in 1991, have had enormous effects on the ecosystem, consuming most of the plankton in the river, making the water clearer, encouraging the growth of submerged plants, eliminating several of its native species, depleting dissolved oxygen, and generally transforming the river's ecosystem. The IES team has been studying the ecology of the Hudson River since 1986, and has produced one of the most detailed studies of the ecological effects of any invasive species. Among the key findings is that the ecological condition of the river varies from year to year as a result of large fluctuations in the zebra mussel population and year-to-year changes in local weather. The LTREB grant will allow IES researchers to continue their work for the next five years, with the goal of understanding how the Hudson River's ecosystem changes from one year to the next.

Spring Ecology Day Camp April 9 - 12, 2001

Become an IES Junior Ecologist!

If you're a 4th, 5th or 6th grader, join us for a four day adventure during your spring break:

- ecology investigations
- hikes
- nature art projects ... and more!

For registration information, call the Education Office at 677-5359 or e-mail doyley@ecosystudies.org.

Registration deadline: March 16th.

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CONTINUING EDUCATION

For **winter 2001** program information, or to request a catalogue, call the Continuing Education office at 845-677-9643. Programs during January and February are:

Gardening

Jan. 18 (6 sessions): **Ecological Management of the Commercial Greenhouse**

Jan. 27 (2): **Healthy Trees and Shrubs**

Feb. 10: **Innovative Perennial Garden Design**

Landscape Design

Jan. 17 (7): **Graphics**

Jan. 17 (5 Wed., 2 Sat.): **Landscape Design II: Plan Development**

Jan. 18 (8): **Principles of Landscape Design**

Jan. 27: **"Right Plant, Right Place"**

Feb. 26 (8): **Construction I: Grading and Drainage**

Biology

Jan. 23 (8): **Basic Botany**

Workshop

Feb. 24: **Biodiversity Assessment Workshop**

Natural Science Illustration

Jan. 21 (4): **Watercolors in the Greenhouse - Special Topics**

Feb. 3 (3): **Pen and Ink I: Techniques**

Natural Crafts

Feb. 5: **Valentine Tussie-Mussie**

And register now for:

Mar. 5: **Excursion to the Philadelphia Flower Show**

* Visit Continuing Education on the IES Website, at www.ecostudies.org/cep to see the complete winter course list and to register online.

VOLUNTEER OPPORTUNITIES

Volunteer Program administration ... visitor reception ... clerical work in the Education Program office ... Continuing Education Program marketing ... ask about other current openings
Call Ms. Su Marcy at 845-677-7600 ext. 317

Calendar

IES SEMINARS

Free **scientific seminars** are held each Friday from September until May, at 11 a.m. in the Auditorium. Titles for upcoming seminars were not available at press time, but will be posted on the IES Website. Following are the dates and speakers for January and February:

Jan. 19: Dr. Neal Scott, Woods Hole Research Center

Jan. 26: Dr. Francis Chan, Cornell Univ. and IES

Feb. 2: Dr. Zoe Cardon, Univ. of Connecticut

Feb. 9: Dr. Kathleen LoGiudice, IES

Feb. 16: Dr. Steve Lindberg, Oakridge National Laboratory

Feb. 23: Dr. Christopher Craft, Indiana Univ.

THE ECOLOGY SHOP

New in the Shop ... cotton dishtowels, varied designs and colors ... calendars and datebooks ... mini flower presses ... **for children** ... metamorphosis toys ... nature fact packs ... insect/butterfly/reptile sticker books ... **in the Plant Room** ... plant markers ... water sensors

Senior Citizens Days: 10% off on Wednesdays

!! January Sale !!

Month-long sale: 50% off all holiday merchandise, holiday plants, 2001 calendars ... 50% off all T-shirts ... 20% off all regularly priced gifts, plants and books

HOURS

Winter Hours: October 1 - March 31

Public attractions are open Mon. - Sat., 9 a.m.-4 p.m. & Sun. 1-4 p.m., with a free permit.
(Note: The Greenhouse closes at 3:30 p.m. daily.)

The Ecology Shop is open Mon.- Fri., 11 a.m.-4 p.m., Sat. 9 a.m.-4 p.m. & Sun. 1-4 p.m.

(The shop is closed weekdays from 1-1:30 p.m.)

• *Free permits are required for visitors and are available at The Ecology Shop or the Education Office before 3 p.m. daily.*

Summer hours begin April 1.

GREENHOUSE

The greenhouse is a year-round tropical plant paradise and a site for controlled environmental research. The building is open until 3:30 p.m. with a free permit (see HOURS).

MEMBERSHIP

Join the Institute of Ecosystem Studies. Benefits include subscription to the newsletter, member's rate for courses and excursions, a 10% discount on IES Ecology Shop purchases, and participation in a reciprocal admissions program. Individual membership: \$40; family membership: \$50. Call the IES Development Office at 845-677-5343.

The Institute's Aldo Leopold Society

In addition to receiving the benefits listed above, members of The Aldo Leopold Society are invited guests at spring and fall IES science updates. Call the IES Development Office at 845-677-5343.

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Street address: Gifford House Visitor and
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... IES Website: www.ecostudies.org

For information on current IES public events and attractions, visit: www.ecostudies.org/welcome/ThisWeek.html.

For garden tips, follow the link to the Perennial Garden Archives.